Conductance of Ideally Cation Selective Channel Depends on Anion Type

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Gramicidin A (gA) is a transmembrane, cation selective ion channel that has been used in many biophysical studies of lipid bilayers, in particular for investigations of lipid-protein interactions and membrane electrostatics. In addition, it was found that ionic interactions with neutral lipid membranes also affect the kinetics of gA channels. Here we report measurements of gA ion-channels for a series of sodium and potassium salts that show an *anion*-dependence of gA conductance. We find that gA conductance varies significantly with the anion type with ClO_4 and SCN producing distinctly larger conductance values than Cl, F, and H_2PO_4. These results can provide new insights into ion-lipid membrane interactions and ion channel functions in general.

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